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NORTH AMERICA INTELLECTUAL PROPERTY CORPORATION P.O. BOX 506 MERRIFIELD, VA 22116			EXAMINER HOUSHMAND, HOOMAN	
			ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/708,027	Applicant(s) LO ET AL.	
	Examiner Hooman Houshmand	Art Unit 2619	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02/03/2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>07/02/2007</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claims 3, 5, 6, 7, 8, 11, 13, 14, 15, 16 recite the following: “*sub-header*”. The specification is objected to as failing to provide proper antecedent basis for this claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-5, 8-13, 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kitada (US 20030037163), in view of Applicant admitted prior art.

Claim 1. Kitada disclose *a method for fragmenting an incoming packet for transmission* (p11 [0185] perform fragment processing on IP packets in order to encapsulate the IP packets in accordance with PPPoE; FIG. 2C, [0188] when the IP data is encapsulated in accordance with PPPoE, the overhead of 8 bytes is included in the payload portion of 1,500 bytes, Therefore, the maximum transfer unit of the IP packet is reduced to 1,492 bytes. Hence, since the IP packet is transmitted in accordance with PPPoE, fragment processing is required).

Kitada may not explicitly teach as a first outgoing packet and a second outgoing packet, storing a payload of the incoming packet in a plurality of storage units beginning in a first storage unit; transmitting the first outgoing packet being formed according to a predetermined portion of the payload stored in the first storage unit; and after transmitting the first outgoing packet, transmitting the second outgoing packet being formed according to a remaining portion of the payload stored in the storage units.

In the same field of endeavor, Applicant admitted prior art discloses *as a first outgoing packet* (Fig. 2 element 206) *and a second outgoing packet* (Fig. 2 element 210), *storing a payload of the incoming packet in a plurality of storage units beginning in a first storage unit* (Fig. 3 Buffers 1-12); *transmitting the first outgoing packet being formed according to a predetermined portion of the payload stored in the first storage unit* (Fig. 3 up to the copy point [0022] storage unit sizes other than 128-bytes are also acceptable; Hence, a first storage unit covering up to the copy point and a second storage unit covering the remaining bits); *and after transmitting the first outgoing packet, transmitting the second outgoing packet being formed according to a remaining portion of the payload stored in the storage units* (Fig. 2 element 210 Fragment 2 element 208).

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of the Applicant's admitted prior art

with Kitada to implement Kitada's IP data encapsulation in accordance with PPPoE protocol.

Claim 2. Kitada further teaches *the first and second outgoing packets are Point-to-Point Protocol over Ethernet frames ([0185] perform fragment processing in order to encapsulate in accordance with PPPoE; FIG. 2C).*

Claim 3. Kitada may not explicitly teach *generating a first outgoing sub-header according to a header of the incoming packet and the predetermined portion of the payload stored in the first storage unit; generating a second outgoing sub-header according to the header of the incoming packet or the first outgoing sub-header, and the remaining portion of the payload; including the first outgoing sub-header and the predetermined portion of the payload stored in the first storage unit in the first outgoing packet; and including the second outgoing sub-header and the remaining portion of the payload stored in the storage units in the second outgoing packet.*

In the same field of endeavor, Applicant admitted prior art discloses *generating a first outgoing sub-header according to a header of the incoming packet and the predetermined portion of the payload stored in the first storage unit (Fig. 2 element 206, element 204); generating a second outgoing sub-header according to the header of the incoming packet or the first outgoing sub-header, and the remaining portion of the payload (Fig. 2 element 210, element 208); including the first outgoing sub-header and*

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the predetermined portion of the payload stored in the first storage unit in the first outgoing packet (Fig. 3 up to the copy point); and including the second outgoing sub-header and the remaining portion of the payload stored in the storage units in the second outgoing packet (Fig. 3 after the Copy point).

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of the Applicant's admitted prior art with Kitada to implement Kitada's IP data encapsulation in accordance with PPPoE protocol.

Claim 4. Kitada further teaches *the incoming packet is an Internet Protocol packet and the header of the incoming packet is the IP header of the incoming IP packet ([0185] perform fragment processing on IP packets).*

Claim 5. Kitada may not explicitly teach *the first outgoing sub-header is a first IP header corresponding to the predetermined portion of the payload stored in the first storage unit and the incoming IP header, and the second outgoing sub-header is a second IP header corresponding to the remaining portion of the payload, and the incoming IP header or the first outgoing sub-header.*

In the same field of endeavor, Applicant admitted prior art discloses *the first outgoing sub-header is a first IP header corresponding to the predetermined portion of the*

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payload stored in the first storage unit (Fig. 3 up to the copy point) and the incoming IP header (Fig. 2 element 206, element 204), and the second outgoing sub-header is a second IP header corresponding to the remaining portion of the payload (Fig. 3 after the Copy point), and the incoming IP header or the first outgoing sub-header (Fig. 2 element 210, element 208).

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of the Applicant's admitted prior art with Kitada to implement Kitada's IP data encapsulation in accordance with PPPoE protocol.

Claim 8. Kitada may not explicitly teach *the first outgoing sub-header and the first fragment are included as a first outgoing payload of the first outgoing packet, and the second outgoing sub-header and the second fragment are included as a second outgoing payload of the second outgoing packet.*

In the same field of endeavor, Applicant admitted prior art discloses *the first outgoing sub-header and the first fragment are included as a first outgoing payload of the first outgoing packet (Fig. 2 element 206), and the second outgoing sub-header and the second fragment are included as a second outgoing payload of the second outgoing packet (Fig. 2 element 210).*

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It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of the Applicant's admitted prior art with Kitada to implement Kitada's IP data encapsulation in accordance with PPPoE protocol.

Claim 9. Kitada disclose *a method for fragmenting an incoming packet for inclusion* ([0185] perform fragment processing on IP packets in order to encapsulate the IP packets in accordance with PPPoE; FIG. 2C, [0188] when the IP data is encapsulated in accordance with PPPoE, the overhead of 8 bytes is included in the payload portion of 1,500 bytes, Therefore, the maximum transfer unit of the IP packet is reduced to 1,492 bytes. Hence, since the IP packet is transmitted in accordance with PPPoE, fragment processing is required)

Kitada may not explicitly teach *a first outgoing packet and a second outgoing packet, storing a payload of the incoming packet as a first fragment and a second fragment in a plurality of storage units, the first fragment is stored within a single storage unit; including the first fragment in the first outgoing packet; and after including the first fragment in the first outgoing packet, including the second fragment in the second outgoing packet.*

Applicant admitted prior art discloses *a first outgoing packet* (Fig. 2 element 206) *and a second outgoing packet* (Fig. 2 element 210), *storing a payload of the incoming packet*

as a first fragment and a second fragment in a plurality of storage units (Fig. 3 Buffers 1-12), the first fragment is stored within a single storage unit; including the first fragment in the first outgoing packet (Fig. 3 up to the copy point [0022] storage unit sizes other than 128-bytes are also acceptable; Hence, a first storage unit covering up to the copy point and a second storage unit covering the remaining bits); and after including the first fragment in the first outgoing packet, including the second fragment in the second outgoing packet (Fig. 2 element 210 Fragment 2 element 208).

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of the Applicant's admitted prior art with Kitada to implement Kitada's IP data encapsulation in accordance with PPPoE protocol.

Claim 10. Kitada further teaches *the incoming packet is an Internet Protocol packet received in an Ethernet frame and the first and second outgoing packets are Point-to-Point Protocol over Ethernet frames ([0185] perform fragment processing on IP packets in order to encapsulate the IP packets in accordance with PPPoE; FIG. 2C).*

Claim 11. Kitada may not explicitly teach *generating a first outgoing sub-header and a second outgoing sub-header according to the first fragment, the second fragment, and a header of the incoming packet; including the first outgoing sub-header in the first*

outgoing packet; and including the second outgoing sub-header in the second outgoing packet.

In the same field of endeavor, Applicant admitted prior art discloses *generating a first outgoing sub-header and a second outgoing sub-header according to the first fragment, the second fragment, and a header of the incoming packet; including the first outgoing sub-header in the first outgoing packet; and including the second outgoing sub-header in the second outgoing packet* (Fig. 2 elements 200, 206, 210).

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of the Applicant's admitted prior art with Kitada to implement Kitada's IP data encapsulation in accordance with PPPoE protocol.

Claim 12. Kitada further teaches *the incoming packet is an incoming Internet Protocol packet and the header of the incoming packet is the IP header of the incoming IP packet* ([0185] perform fragment processing on IP packets).

Claim 13. Kitada may not explicitly teach *the first outgoing sub-header is a first outgoing IP header generated corresponding to the first fragment and the IP header of the incoming IP packet, and the second outgoing sub-header is a second outgoing IP*

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header generated corresponding to the second fragment, and the IP header of the incoming IP packet or the first outgoing sub-header.

In the same field of endeavor, Applicant admitted prior art discloses *the first outgoing sub-header is a first outgoing IP header generated corresponding to the first fragment and the IP header of the incoming IP packet, and the second outgoing sub-header is a second outgoing IP header generated corresponding to the second fragment, and the IP header of the incoming IP packet or the first outgoing sub-header* (Fig. 2 elements 200, 206, 210).

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of the Applicant's admitted prior art with Kitada to implement Kitada's IP data encapsulation in accordance with PPPoE protocol.

Claim 16. Kitada may not explicitly teach *the first outgoing sub-header and the first fragment are included in a payload of the first outgoing packet, and the second outgoing sub-header and the second fragment are included in a payload of the second outgoing packet.*

In the same field of endeavor, Applicant admitted prior art discloses *the first outgoing sub-header and the first fragment are included in a payload of the first outgoing packet*

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(Fig. 2 element 206), *and the second outgoing sub-header and the second fragment are included in a payload of the second outgoing packet* (Fig. 2 element 210).

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of the Applicant's admitted prior art with Kitada to implement Kitada's IP data encapsulation in accordance with PPPoE protocol.

Claim 17. Kitada disclose *a method for fragmenting an IP packet for transmission as Point-to-Point Protocol over Ethernet frames*, ([0185] perform fragment processing on IP packets in order to encapsulate the IP packets in accordance with PPPoE; FIG. 2C, [0188] when the IP data is encapsulated in accordance with PPPoE, the overhead of 8 bytes is included in the payload portion of 1,500 bytes, Therefore, the maximum transfer unit of the IP packet is reduced to 1,492 bytes. Hence, since the IP packet is transmitted in accordance with PPPoE, fragment processing is required).

Kitada may not explicitly teach *storing a payload of the IP packet as a first fragment and a second fragment in a plurality of storage units, the first fragment is stored within a single storage unit; transmitting the first PPPoE frame having a payload including the first fragment; and after transmitting the first PPPoE frame, transmitting the second PPPoE frame having a payload including the second fragment.*

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In the same field of endeavor, Applicant admitted prior art discloses *storing a payload of the IP packet as a first fragment and a second fragment in a plurality of storage units* (Fig. 3 Buffers 1-12), *the first fragment is stored within a single storage unit* (Fig. 3 up to the copy point [0022] storage unit sizes other than 128-bytes are also acceptable; Hence, a first storage unit covering up to the copy point and a second storage unit covering the remaining bits); *transmitting the first PPPoE frame having a payload including the first fragment* (Fig. 2 element 206); and after transmitting the first PPPoE frame, transmitting the second PPPoE frame having a payload including the second fragment (Fig. 2 element 210 Fragment 2 element 208).

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of the Applicant's admitted prior art with Kitada to implement Kitada's IP data encapsulation in accordance with PPPoE protocol.

Claim 18. Kitada may not explicitly teach *modifying an incoming IP header of the IP packet according to the first fragment to form a first outgoing IP header; modifying the incoming IP header or the first outgoing IP header according to the second fragment to form a second outgoing IP header; including the first outgoing IP header in the payload of the first PPPoE frame; and including the second outgoing IP header in the payload of the second PPPoE frame.*

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In the same field of endeavor, Applicant admitted prior art discloses *modifying an incoming IP header of the IP packet according to the first fragment to form a first outgoing IP header; modifying the incoming IP header or the first outgoing IP header according to the second fragment to form a second outgoing IP header; including the first outgoing IP header in the payload of the first PPPoE frame; and including the second outgoing IP header in the payload of the second PPPoE frame* (Fig. 2 elements 200, 206, 210).

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of the Applicant's admitted prior art with Kitada to implement Kitada's IP data encapsulation in accordance with PPPoE protocol.

4. Claims 6-7, 14-15, 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kitada and Applicant admitted prior art, in view of Kitamura (US 20030065799).

Claim 6. Kitada may not explicitly teach *generating the first outgoing sub-header comprises modifying the MF, Offset, Length, and Checksum fields of the incoming IP header according to the predetermined portion of the payload stored in the first storage unit*.

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In the same field of endeavor, Kitamura discloses *generating the first outgoing sub-header comprises modifying the MF, Offset, Length, and Checksum fields of the incoming IP header according to the predetermined portion of the payload stored in the first storage unit* (Fig. 8, p6 [0118] expanded PPPoE portion, an upper layer identifier, a version, a type, a TOS, a data length, an identifier, a flag, a fragment offset, a TTL, an upper layer identifier, a header checksum, a source IP address, a destination IP address are written).

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of Kitamura with Kitada to follow the same arrangement as is customary in packet communications when one packet is fragmented into multiple packets.

Claim 7. Kitada may not explicitly teach *generating the second outgoing sub-header comprises modifying the MF, Offset, Length, and Checksum fields of the incoming packet IP header or the first outgoing sub-header according to the remaining portion of the payload stored in the storage units.*

In the same field of endeavor, Kitamura discloses *generating the second outgoing sub-header comprises modifying the MF, Offset, Length, and Checksum fields of the incoming packet IP header or the first outgoing sub-header according to the remaining portion of the payload stored in the storage units* (Fig. 8, [0118] expanded PPPoE

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portion, an upper layer identifier, a version, a type, a TOS, a data length, an identifier, a flag, a fragment offset, a TTL, an upper layer identifier, a header checksum, a source IP address, a destination IP address are written).

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of Kitamura with Kitada to follow the same arrangement as is customary in packet communications when one packet is fragmented into multiple packets.

Claim 14. Kitada may not explicitly teach *generating the first outgoing sub-header modifies the MF, Offset, Length, and checksum fields of the incoming packet IP header according to the first fragment.*

In the same field of endeavor, Kitamura discloses *generating the first outgoing sub-header modifies the MF, Offset, Length, and checksum fields of the incoming packet IP header according to the first fragment* (Fig. 8, [0118] expanded PPPoE portion, an upper layer identifier, a version, a type, a TOS, a data length, an identifier, a flag, a fragment offset, a TTL, an upper layer identifier, a header checksum, a source IP address, a destination IP address are written).

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of Kitamura with Kitada to follow the

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same arrangement as is customary in packet communications when one packet is fragmented into multiple packets.

Claim 15. Kitada may not explicitly teach *generating the second outgoing sub-header modifies the MF, offset, length, and checksum fields of the incoming packet IP header or the first outgoing sub-header according to the second fragment.*

In the same field of endeavor, Kitamura discloses *generating the second outgoing sub-header modifies the MF, offset, length, and checksum fields of the incoming packet IP header or the first outgoing sub-header according to the second fragment* (Fig. 8, [0118] expanded PPPoE portion, an upper layer identifier, a version, a type, a TOS, a data length, an identifier, a flag, a fragment offset, a TTL, an upper layer identifier, a header checksum, a source IP address, a destination IP address are written).

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of Kitamura with Kitada to follow the same arrangement as is customary in packet communications when one packet is fragmented into multiple packets.

Claim 19. Kitada may not explicitly teach *modifying the incoming IP header of the IP packet according to the first fragment to form the first outgoing IP header by modifying the MF, offset, length, and checksum fields of the incoming IP header according to the*

first fragment; and modifying the incoming IP header or the first outgoing IP header according to the second fragment to form the second outgoing IP header by modifying the MF, offset, length, and checksum fields of the incoming IP header or the first outgoing IP header according to the second fragment.

In the same field of endeavor, Kitamura discloses *modifying the incoming IP header of the IP packet according to the first fragment to form the first outgoing IP header by modifying the MF, offset, length, and checksum fields of the incoming IP header according to the first fragment; and modifying the incoming IP header or the first outgoing IP header according to the second fragment to form the second outgoing IP header by modifying the MF, offset, length, and checksum fields of the incoming IP header or the first outgoing IP header according to the second fragment* (Fig. 8, [0118] expanded PPPoE portion, an upper layer identifier, a version, a type, a TOS, a data length, an identifier, a flag, a fragment offset, a TTL, an upper layer identifier, a header checksum, a source IP address, a destination IP address are written).

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of Kitamura with Kitada to follow the same arrangement as is customary in packet communications when one packet is fragmented into multiple packets.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hooman Houshmand whose telephone number is (571)270-1817. The examiner can normally be reached on Monday - Friday 8 to 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Hooman Houshmand
Patent Examiner
April 21, 2008

/Hassan Kizou/
Supervisory Patent Examiner, Art Unit 2619